Partitioning Methods On Dissimilarity Matrices Set

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Abstract. Cluster analysis have been widely used in numerous fields including pattern recognition, data mining and image processing. Their aim is to organize a set of items into clusters such that items within a given cluster have a high degree of similarity. In particular, partitioning clustering models aims to organize a set of items into a pre-defined number of clusters. Our reference clustering model is the k-means like algorithms .

In this presentation, we introduce partitioning clustering models and algorithms that are able to partitioning objects taking into account simultaneously their relational descriptions given by multiple dissimilarity matrices. The aim is to obtain a collaborative role of the different dissimilarity matrices in order to obtain a final consensus partition. These matrices have been generated using different sets of variables and dissimilarity functions. These methods are designed to furnish a partition and a prototype for each cluster as well as to learn a relevance weight for each dissimilarity matrix by optimizing an adequacy criterion that measures the fitting between the clusters and their representatives.

Experiments with data sets (synthetic and from UCI machine learning repository) show the usefulness of the proposed methods.

References

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Keywords

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